CLAIMS

We claim:

1. An infrared emitter element comprising:

at least one emitter tube (2a, 2b) comprising silica glass, the emitter tube having two ends;

at least one electrical conductor (4a, 4b) arranged in the emitter tube as a radiation source;

a cooling tube (3) comprising silica glass, the cooling tube surrounding the at least one emitter tube spaced therefrom and being connected to the at least one emitter tube directly at its ends, such that in a region of the at least one electrical conductor at least one flow-supporting channel (3a) is formed between the at least one emitter tube and the cooling tube; and

a metallic reflector (8),

wherein the cooling tube (3) is completely covered with the reflector (8) on its side facing away from the emitter tube (2a, 2b).

2. The infrared emitter element according to claim 1, wherein the emitter tube (2a, 2b) is closed gas-tight on its two ends, and wherein a gas-tight current bushing (5a, 5b) is arranged on at least one of the two ends.

3. The infrared emitter element according to claim 1, wherein the cooling tube (3) is arranged coaxial to the at least one emitter tube (2a, 2b).

4. The infrared emitter element according to claim 1, wherein the cooling tube (3) has on its one end an inlet port (9a) and on its other end an outlet port (9b).

5. The infrared emitter element according to claim 1, wherein the reflector (8) comprises a gold layer.

6. The infrared emitter element according to claim 5, wherein the gold layer is fired onto the cooling tube (3).

7. The infrared emitter element according to claims 5, wherein the reflector (8) is covered with a protective layer (11) on its side facing away from the cooling tube (3).

8. The infrared emitter element according to claim 1, further comprising elements made of silica glass arranged in the at least one channel (3a) for influencing flow.

9. The infrared emitter element according to claim 1, wherein the at least one channel (3a) has an at least approximately circular ring-shaped cross section.

10. The infrared emitter element according to claim 1, wherein the at least one channel (3a) runs in spiral form along the at least one emitter tube (2a, 2b).

11. The infrared emitter element according to claim 1, wherein the electrical conductor (4a, 4b) comprises tungsten.

12. The infrared emitter element according to claim 1, wherein the electrical conductor (4a, 4b) comprises NiCr or AlCrFe.

13. The infrared emitter element according to claim 1, wherein the electrical conductor (4a, 4b) comprises a carbon material.

14. The infrared emitter element according to claim 1, in a form of a through-flow heater for a liquid or a gas, wherein the liquid or gas flows through the at least one channel (3a) between the cooling tube (3) and the at least one emitter tube (2a, 2b) and is heated by the at least one radiation source.

15. The infrared emitter element according to claim 14, wherein the liquid is high-purity water according to ASTM D1193-99e1, Type I/ and ASTM D5127-99 Type E1, E1.1 and E1.2

16. The infrared emitter element according to claims 14, wherein the liquid is high-purity water according to ASTM D1193-99e1, Type A/ and ASTM D5127-99 Type E1, E1.1 and E1.2

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